

## REMARKS/ARGUMENTS

### Specification

The Examiner has observed:

The disclosure is objected to because of the following informalities: the word “legs” on the fourth line of paragraph 8 appears to be in error.

Consistent with the drawings and disclosure of United States patent no. 5,067,535, paragraph 8 has, accordingly, been revised to read, in pertinent part, “the legs to which the wheels are attached extend straight beyond the wheels, creating a potential physical conflict with the ground or other objects when the wheels are utilized to push or pull the table.

Applicant has also independently added to paragraph [0030] that a preference, as illustrated in FIG. 1, FIG. 2, and FIG.3, is to have the attachment of the two one-piece legs 1, 2 to the tabletop 4 near the first end 5 of the tabletop 4.

### Claim Rejections

35 U.S.C. § 112

The Examiner has also noted:

Claims 20-23 and 35-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 20 and 35 recite a second power assist actuator before any recitation of a first power assist actuator. Because this implies a limitation that is not actually present in the claims (a first power assist actuator), the claims are deemed indefinite.

Claims 21-23 and 36-38 are deemed indefinite as being dependent on indefinite claims.

In accordance with the courteous guidance from the Examiner, claims 20 and 35 have been amended to recited only a “power assist actuator.”

Independently, Applicant has also observed that in the independent claims that existed prior to the present Amendment, *i.e.*, claims 14, 16, 17, 19, 20, 24, 26, 27, 35, 39, 41, and 42, it was stated, “. . . a second two-piece leg having a first end of a first segment pivotally attached, at a point of attachment which is farther from the first end of the tabletop than is the point of attachment for the first end of the first one-piece leg . . . .” Although this is accurate, an even more appropriate phrase, in view of paragraph [0032] is “. . . a second two-piece leg having a first end of a first segment pivotally attached, at a point of attachment which is farther from the first end of the tabletop than is the point of attachment for the second end of the first one-piece leg . . . .”

Paragraph [0032] provides:

**[0032]** Also, the point of attachment **11** for the first end **3** of the first one-piece leg **1** is closer to the first end **5** of the tabletop **4** than is the point of attachment **22** for the first end **14** of the first segment **15** of the first two-piece leg **12**; and the point of attachment **10** for the first end **9** of the second one-piece leg **2** is closer to the first end **5** of the tabletop **4** than is the point of attachment **21** for the first end **19** of the first segment **20** of the second two-piece leg **13**.

These claims have, therefore, been amended so as to use the even more appropriate language.

### 35 U.S.C. § 103

Next the Examiner states:

Claims 20, 27, 28, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell (US Patent Number 3646895) in view of Wolff (US Patent Number 5067535). Campbell discloses a folding table as described in the Jepson portion of the claims [basically first and second one-piece legs (21), first and second two-piece legs (17), and a tabletop (11)]; but does not disclose the

improvement, i.e. first and second wheels connected to the first and second two-piece legs respectively and power assist actuators. Wolff (Figures 1 and 8) discloses a folding table including a first and second wheel (30) having a radius and a bottom and being rotatably connected to a segment of a first and second leg (17, 19, including 31, etc.) at a point near a free end (bottom of 17, 19) with the legs being bent (viewed as bend of 31 at point of attachment to 17, 19) near the point of attachment of said wheels to the leg at an angle away from the tabletop; the dimensions of the wheels and legs selected such that the free ends of the legs hold the wheels above a surface supporting the table when the legs have been unfolded to support the tabletop (see for example column 3 line 68 to column 4 line 2) while maintaining the free ends of the legs higher than the bottom of the said wheels and providing ground clearance for the free ends of the legs when the table has been folded that can substantially equal the radius of a wheel (see for example Figure 8 where the table is near its folded position and it is clear that the ground clearance of the free end of the legs is variable based on the angle of the table relative to the ground). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Campbell's table to include wheels that are disengaged from the ground when the table is unfolded, but engaged with the ground when the table is folded as taught by Wolff because this arrangement would allow Campbell's table to be moved easily when folded, but maintain its stability when unfolded. Furthermore, it would have been obvious to include bends in the legs to enhance the stability of the table. Wolff further discloses first and second power assist actuators (28) pivotally connected to the tabletop and a first and second one-piece leg (18, 20). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Campbell's table to include first and second power assist actuators as taught by Wolff because this arrangement would provide Campbell's table with an opening and closing assist, making the operation of the table easier as well as maintaining the legs in their folded or unfolded positions.

Applicant respectfully believes that Campbell (United States patent no. 3,646,895) cannot be modified by Wolff (United States patent no. 5,067,535) to create the invention of claims 20, 27, 28, and 35 for two principal reasons. First, the legs 17 about which the tabletop of Wolff is rotated for folding are farther from the first end (the end grasped when folding) of the tabletop than are the other legs whereas in all claims (including claims 20, 27, 28, and 35) of the present Application, the legs (the one-piece legs 1, 2) about which the tabletop 4 rotates are closer to the first end 5 (the end associated with grasping, either with or without a handle 81) than are the

other legs (the two-piece legs 12, 13). Second, the springs 28 of Wolff are not power assist actuators.

Nothing in either Campbell or Wolff teaches that it is critical to have the wheels placed on the two-piece legs.

Significantly, several Board judicial cases have addressed this issue.

The Board of Appeals held in *Ex parte Phair*, 1. U.S.P.Q. 133, 134 (Bd. App. 1929), that “. . . invention may exist in the discovery of the cause of a defect in an existing machine or process and applying a remedy therefor even though, after the cause is understood, the remedy would be obvious.” See, also, *Ex parte Campbell*, 211 U.S.P.Q. 575 (Bd. App. 1980).

It is easy to see the simplicity of construction and method of operation of a satisfactory operable device after it has been constructed and explained, and the courts have frequently commented upon the fact that some of the apparently simplest modifications and changes promoted such revolutionary results as to have a marked influence upon the development of the art and that in such instances, in determining the presence or absence of invention, hindsight should not be substituted for foresight. . . . the conception of doing a thin, the result of which is new and useful, must be considered along with the actual steps of doing it in considering the presence or absence of patentability . . . .

*In re De Lancey*, 34 C.C.P.A. 849, 72 U.S.P.Q. 477, 159 F.2d 737, 741 (1947).

The discovery of a problem calling for an improvement is often a very essential element in an invention correcting such a problem; and though the problem, once realized, may be solved by use of old and known elements, this does not necessarily negative invention.

*In re Bisley*, 39 C.C.P.A. 982, 94 U.S.P.Q. 80, 197 F.2d 355, 363 (1952). See, also, *In re Hamilton*, 20 C.C.P.A. 987, 17 U.S.P.Q. 245, 64 F.2d 141 (1933).

In many inventions there are two distinct steps: first, the conception of the general result wished for; second, the discovery of a way of obtaining it. In a large majority of cases, perhaps, the first may be obvious to every one interested in a particular art, and it is the second which calls for the exercise of inventive genius. But that is not always so. It may well be that two or more machines, appliances, or tools are old and well known. Some day it dawns on some one

that, if they are combined, new and useful results will be obtained. It may be that, so soon as the advantages of the combination are understood, the means of bringing it about are within the capacity of any fairly skilled mechanic. In a third class of cases inventive genius may be required both in perceiving the combination that is desirable, and in finding out a practical way of making it.

*In re Earle*, 26 C.C.P.A. 974, 41 U.S.P.Q. 24, 102 F.2d 232, 235 (1939), quoting *Rosemary Manufacturing Co. v. Halifax Cotton Mills, Inc.*, 257 F. 321, 322 (4<sup>th</sup> Cir. 1919).

Finally, the court's opinion for *In re Pennington*, 44 C.C.P.A. 789, 113, U.S.P.Q. 81, 241 F.2d 750, 754 (1957), remarked that when an essential portion of the inventor's contribution to the art resided in appreciating a deficiency in the prior art, the fact that once the problem had been appreciated, one skilled in the art might be able to construct the inventor's apparatus without the further use of the inventive faculty . . . does not detract from the inventive nature of the initial concept."

Applicant recognized that by placing the wheels on the two-piece legs rather than the one-piece legs and by having the one-piece legs connect nearer to the end of the tabletop which is grasped for folding than are the two-piece legs, folding could be accomplished with one hand and there would be no need to place a foot against any portion of the table.

Wolff, on the contrary, in lines 15 through 22 of column 4, explains:

When folding the table, as shown in FIGS. 4-6 the operator first releases locking device 29 (not shown) by bending it upwardly, and then detaches locking bar 26 from front leg 17 and swings it rearwardly, holding it in one hand and using it as a handle. With his other hand, the user grasps handle 12 at the rear edge of the table and pulls on handle 12 while pressing with one foot on footbar 32, thereby beginning to fold the table.

And, with regard to the second issue, paragraphs [0012] and [0017] of the present Application explain:

[0012] Significantly, however, a spring, unlike a piston within a cylinder, does not tend smoothly to resist reverse motion and has more tendency to break loose suddenly.

...

[0017] A first facet of the improvement is a power assist actuator (which comprises a housing having a closed first end, a bore with a piston slidably mounted within the bore, and a second end containing an aperture; pressurized fluid—preferably a gas—on a first side of the piston; and a rod having a first end connected to a second side of the piston, an intermediate portion passing through the aperture in the second end of the housing, and a second end) having a first end (which is also the first end of the housing) pivotally connected to the tabletop and a second end (which is also the second end of the rod) pivotally connected to a first one-piece leg. Preferably, a second power assist actuator also has a first end pivotally connected to the tabletop and a second end pivotally connected to a second one-piece leg. (The orientation of either or both power assist actuators can be reversed, *i.e.*, the first end of a power assist actuator can be pivotally connected to a one-piece leg while the second end is pivotally connected to the tabletop.)

For the preceding reasons, Applicant respectfully submits that claims 20, 27, 28, and 35 are patentable and not unpatentable over Campbell in view of Wolff.

Furthermore, since all claims include the limitations concerning the legs discussed above, including new claims 43 through 46, Applicant respectfully submits that all claims 14 through 46 are patentable. And those which include one or more power assist actuators (all claims except 24, 25, 26, 39, 40, and 41) are independently patentable for the reasons discussed above with respect to the power assist actuator.

New claim 43 includes the same limitations as canceled claims 10 and 12. New claim 44 includes the same limitations as canceled claim 13. New claim 45 adds to the limitations of canceled claims 10 and 12 the limitation that “. . . the point of attachment for the first end of the first segment of the first one-piece leg is near the second end of the tabletop and . . . the point of attachment for the first end of the first segment of the second one-piece leg is near the second

end of the tabletop . . . .” New claim 46, through its dependency on new claim 45, adds this same limitation to canceled claim 13.

Having the point of attachment for the first end 3, 9 of each of the one-piece legs 10, 12 near the first end 5 (the end associated with grasping, either with or without a handle 81) of the tabletop 4 provides a further advantage in performance that was perceived by the inventor when rotation of the tabletop 4 for folding is about the one-piece legs 1, 2 (which is possible because Applicant perceived that having the wheels on the two-piece legs 12, 13). Any weight on the tabletop 4 aids the rotation of the tabletop 4 about the one-piece legs 1, 2 and, consequently, the folding of the table. Consequently, claims 45 and 46 are, Applicant respectfully submits, for this further independent reason, patentable.

Finally, with respect to rejections based upon Cheng et al. (United States patent no. 5,829,365), it is, Appellant respectfully observes, apparent that the free ends of the legs in Cheng bend in the longitudinal (end to end) direction of the tabletop whereas the free ends of the legs in the present invention bend in the transverse (side to side) of the tabletop. (This distinction is, however, considered minor by Applicant.)

Applicant respectfully requests the Examiner to allow Claims 14 through 46.

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Respectfully,

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